THEORY OF ATOMIC NUCLEUS
AND FUNDAMENTAL INTERACTIONS

COORDINATE ASYMPTOTICS OF WAVE FUNCTIONS
OF THE THREE AND FOUR PARTICLE SYSTEMS
WITH SHORT-RANGE INTERACTIONS

Yakovlev S.L.

Saint-Petersburg State University, Russia
E-mail: sl-yakovlev@yandex.ru

The coordinate asymptotics of the wave functions of the three and four particle systems is studied with the help of Faddeev and Faddeev-Yakubovsky equations. The most complicated case of states with all particles in the continuum is considered. Among different asymptotic configuration the two specific ones are considered in details, i.e. the sector where the distances between all the particles are large and the sector where the two of particles are close whereas the others are at large separations. Besides the standard terms describing the incident and scattered fluxes, the asymptotic behavior of the wave functions contains the number of terms which decrease at large separations of particles slower than respective spherical waves. These terms correspond to processes of single, double and triple rescattering of particles.

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